

**ATTITUDE OF FORM TWO STUDENTS TOWARDS LEARNING
SCIENCE IN ENGLISH: A CASE STUDY OF SCHOOLS IN KOTA
SAMARAHAN**



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Dear Professor,

**FINAL RESEARCH REPORT “ATTITUDE OF FORM TWO STUDENTS
TOWARDS LEARNING SCIENCE IN ENGLISH: A CASE STUDY OF
SCHOOLS IN KOTA SAMARAHAN”**

With reference to the above matter, enclosed herewith are three (3) copies of the final research report entitled “Attitude of Form Two Students towards learning Science in English: A case study of schools in Kota Samarahan” by the research team from Uitm Kampus Samarahan for your action.

Thank you.

Yours sincerely.



Caesar De Alwis
Leader
Research Project

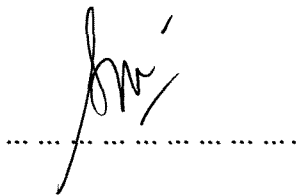
RESEARCH GROUP

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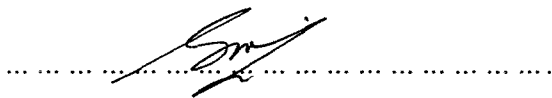
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SMK Muara Tuang
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SMK Sungai Tapang
SMK Kota Samarahan

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Figure 1: A Schematic conception of attitude (after Rosenberg and Howland, 1960)

ABSTRACT

This report presents the findings of a research project, which examined the attitude of Form Two students towards learning Science in English. The research was both quantitative and qualitative. A total of 320 students from six secondary schools in Kota Samarahan District in the Samarahan Division participated in this research. The students had to complete one set of questionnaire, which consisted of 40 items using the Likert scale. The questionnaire was divided into two sections: attitude towards English Language and attitude towards learning Science in English. The items were grouped into four Dimensions for each section, namely; English Language Dimension, Language –Related Dimension, Job/Future Study Dimension and Cultural Dimension. The items in the second section were also grouped into four similar Dimensions namely; Science Dimension, Science-Related Dimension, Job/Future Study Dimension and Cultural Dimension.

The data was analysed using SPSS version 12.0. Descriptive statistics were used to describe the profile of the samples of the study. In answering the first research question, descriptive statistics such as frequency count and mean were used to describe the learners' attitude towards each Dimension in their attitude towards English Language. T-test was carried out to determine whether there was any significant difference in attitude towards English by gender and race as far as the English language is concerned. In answering the second research question, descriptive statistics such as frequency count and mean were also used to describe the learners' attitude towards each Dimension in learning Science in English. T-test was carried out to determine whether there was any significant difference in attitude towards learning Science in English by gender and race. In answering the third research question,

correlation analysis was performed to determine any significant relationship between the attitude towards the English Language and attitude towards learning Science in English. The strength of the two relationships between the two variables was determined by using the Davis's Index .The discussion was descriptive in nature.

The attitude towards English Language and attitude towards learning Science in English were analysed through four Dimensions namely; English Language and Science Dimensions; Language-Related/Science-Related Dimensions, Job/Future Study Dimension and Cultural Dimension. Based on the mean score calculated it can be concluded that the general attitude towards English and learning Science in English is good. T-test for English Language attitude score by gender showed that the mean scores of the male students were lower than the female score thus we can conclude that the female students have better attitude towards English than male students. T-test for English Language Attitude Score by race showed the non- Malay students are more positive towards learning English than the Malay students. T-test for attitude towards learning Science by gender again showed that the female students have better attitude when compared to the male students. T- test for learning Science by race showed that there was no significant difference in the overall attitude between the Malays and non-Malays. Pearson Correlation Analysis of the relationship between attitude towards English Language and learning Science in English showed that students with good attitude towards English also have good attitude towards Science.

This study was a good start for future studies, much larger in magnitude, particularly in the context of Sarawak as a whole.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

The teaching of Science and Mathematics in English in Primary One, Form One and Lower Six beginning the year 2003 laid the foundation in the use of English in the fields of science and technology not only for the present but also for further studies at tertiary level. The knowledge gained will not only enhance personal learning but also enable learners to think critically of issues in science and technology in English. *Learners are taught the scientific and mathematical concepts and ideas in English.* The communicative methodology is recommended for teaching the subjects in English. Teachers are encouraged to teach topics using the four language skills in an integrated manner. Learners are also encouraged to use the English Language actively and to participate actively in the learning process.

The use of English for Science and Mathematics also supports the aims and objectives of the National Philosophy of Education and the Education Act 1996 and contributes towards the optimisation of the intellectual, emotional, spiritual and physical potential of the learners. The curriculum also recognises that learners learn in different styles and ways. They possess their own unique strengths and weaknesses and wherever possible individual needs should be taken into account in teaching. Thus, the policy to change the medium of instruction in the teaching of Science and Mathematics from Bahasa Melayu to English is an important innovation affecting the attitudes of *students of these subjects.*

According to an article published in New Sunday Times dated 22 June 2003, it is stated that pupils' performance in Science and Mathematics have improved significantly after the Government has taken the bold decision to teach the two subjects in English. Former Education Minister Tan Sri Musa Mohammad said a study done in the Federal Territory and the states of Perlis, Kedah, Johore, Terengganu and Sabah showed that the average marks achieved by Year One pupils in the two subjects have improved. Their average score in the examinations for Science was 67 percent and 76 percent for Mathematics. Musa added that another encouraging revelation was the performance of Year One pupils in the English Language examination, which have shot up to an unprecedented 78 percent. He also revealed that in the study by his Ministry's School Inspectorate Division, showed that teachers were further motivated with the introduction of the new policy. About 85 percent of teachers in 1,031 schools throughout the country covered in the study said they were inspired and confident in implementing the policy. This showed that teachers and students were highly motivated and has facilitated the implementation of the new policy.

1.1 Background of the Problem

Even though positive feedbacks towards the policy have been received by the Education Ministry yet the study was confined to Year One pupils only. Students in Form Two (2004) on the other hand have learnt both Science and Mathematics in Bahasa Melayu for six years before they were expected to learn them in English beginning 2003. In areas such as Kota Samarahan where English Language is very

foreign and the proficiency level for English Language is low, the students are facing many challenges hence affecting their attitude towards learning. Mathematics and Science teachers who were trained in the Malay medium have been given only a few weeks of intensive training conducted by English Language Teaching Centre, which provided modules for teaching both subjects in English (ETeMS).

English is not a language which can be mastered merely after a few weeks of training and to expect low proficiency teachers to use it as their medium of instruction in teaching Science for instance, may cause more harm than good. On top of that we cannot deny that English, Science and Mathematics are difficult subjects for many students especially in the rural schools.

The sudden change in the medium of instruction may affect the attitude of these students. The hypothesis is that the students have become passive learners, memorising notes given by their teachers for the sake of passing examinations. Many of them are still adjusting to the sudden switch from Bahasa Melayu to English and are trying to justify themselves as to why they should be learning Science and Mathematics in English and not in Bahasa Melayu.

1.2 Objectives of the Study

The main goal of this study is to investigate the attitude of Form Two students in Kota Samarahan District towards learning Science in English. This main goal is further divided into 3 objectives:

- (i) To determine the students' attitude towards English Language in general.
- (ii) To determine the students' attitude towards learning Science in English
- (iii) To determine if there is any significant relationship between attitude towards the English Language and attitude towards learning Science in English.

1.3 Research Questions

1.3.1 What are the learners' attitude towards English Language from the following Dimensions:-

- i. Association with the English Language Dimension
- ii. Language –Related Dimension
- iii. Job- Related Dimension
- iv. Cultural- Ethnicity Dimension

To answer Research Question 1 the participants in this study were requested to respond to 20 statements /items concerning general attitude towards English

Language. Some of these items were developed as a result of the literature review of Gardner (1985).

1.3.2 What are the learners' attitude towards learning Science in English from the following dimensions:-

- i. Association with Science Dimension
- ii. Science – Related Dimension
- iii. Job-Related Dimension
- iv. Cultural- Ethnicity Dimension

To answer Research Question 2 the participants in this study were requested to respond to 20 statements / items to show their attitude towards learning Science in English.

1.3.3 Is there any significant relationship between attitude towards English language and attitude towards learning Science in English?

In answering this research question, correlation analysis was performed to determine any significant relationship between the attitude of learning English and learning Science in English.

1.4 Scope of the Study

Kota Samarahan is one of the three districts in Samarahan Division. The other two districts are Simunjan and Serian. This research involved all the Form Two classes (2004) in all the six secondary schools in Kota Samarahan District. The students have gone through at least seven years of formal education, which translates to six years of primary education and one year of secondary education. The students have also gone through one year of learning Science in English when they were in Form One (2003). The researchers examined the attitude of these students at learning Science in English in relation to their attitude towards the English language in general and with regards to gender and ethnicity.

The secondary schools involved in the study were: -

1. SMK Muara Tuang
2. SMK Kota Samarahan
3. SMK Asajaya
4. SMK Semera
5. SMK Wira Penrissen
6. SMK Sungai Tapang

1.5 Significance of the Project

- a) The findings of this study will enable policy planners to know whether or not the change in the medium of instruction from Bahasa Melayu to English for the teaching of Science would affect the students' attitude towards the subject.

- b) The research findings can also assist the Education Department when selecting new Science teachers to be posted to the various schools to cater for the needs and expertise needed in order to improve the teaching of Science in English.

- c) The research findings may also be useful for trainers of ETeMS (English for teaching Mathematics and Science) so that they can provide suitable training package for Science teachers from rural schools.

- d) The research findings can provide feedback to all the principals whose schools were involved in the study concerning the attitude of Form Two students towards learning Science in English. This will definitely enable them to further equip their teachers and resource centres with suitable materials in order to make their students more keen in learning Science in English.

1.6 Definition of Terms/ Concept

A. Attitude

The concept of attitude is both complex and abstract. There are many definitions to describe its characteristics. There are basically 2 competing theories about the nature of attitude. Firstly, the behaviourists believe that attitude is a behaviour and response that people make to social response. Social psychologists who subscribe to the behaviourist theory see attitude as a single unit. Secondly, the mentalist view attitude as an intervening factor between a stimulus and a response (Fasold).

Gardner (1985) defines attitudes as a person's reaction to some referent or attitude object. This reaction can be evaluated and be formed based on the person's belief in opinions about the referent. Gardner identifies 2 kinds of attitudes, namely attitude towards the people who speak the target language and attitude towards the use of the language being learned.

In this study, attitude refers to the use of English language in learning Science. It means the beliefs that Form Two students have towards learning Science in English. These beliefs were either positive or negative feelings, which they have towards learning Science in English. As a matter of fact, these feelings can either impede or enhance the process of learning altogether.

B. UPSR: Ujian Penilaian Sekolah Rendah (Primary Six Assessment Test)

1.7 Education in Malaysia

1.7.1 The National Educational Goals are:

a) To achieve national unity

Malaysia is a multi-racial country with a population of 23 million people comprising of Malays, Chinese, Indians forming the majority with other ethnic groups existing in Sabah and Sarawak such as the Ibans, Bidayuhs, Melanaus, Kadazans, Dusuns, Murut, Bajaus and many others. Thus, integration between the various races is important in order to achieve harmony and peace so that all Malaysians will continue to remain united as one race. This goal can be achieved through various ways. Among them are: by establishing 'Vision Schools' where students from vernacular and national schools study in the same compound, enrolment in national schools and national type schools, co-curricular activities, "Malaysia Boleh" spirit; centralised school system and through subjects taught in schools such as Moral Education, History, Bahasa Melayu, English Language, Mathematics, Science, and others

b) The second national education goal is to produce quality manpower for national development.

This is necessary in order to contribute to national development towards achieving the goals of 'Vision 2020' and improving the social and economic status of Malaysians. This particular goal can be achieved by making education compulsory for children from 7 years of age; teaching of Mathematics and Science in English, Smart school where ICT is used, providing vocational and technical schools and emphasising on the usage of English as it has become a global language.

c) The third educational goal is to achieve democratisation of education

This is important in order to achieve political, economic and social stability. This is also to ensure that every Malaysian has equal right and opportunity to study regardless of race, gender, and whether there are living in rural or urban areas. This is done through a systematic education system, which is centralised and structured. To fulfil the needs of every race, national and national-type schools, vision schools and smart schools are set up. The meritocracy and quota systems are also introduced in all institutions of higher learning to give equal opportunities to everyone.

d) The fourth goal education goal is to inculcate positive values in order to ensure that Malaysia is always peaceful and harmonious.

It is also to produce hardworking, respectful and responsible citizens. This is carried out by integrating moral and cultural values during school lessons; providing moral education and Islamic studies in schools and promoting sports, co-curricular activities in schools.

1.7.2 The National Education Philosophy

In Malaysia, the National Education Philosophy is well documented and disseminated throughout the whole education system. The main purpose is to ensure that every individual in the system, from policy makers and planners to the classroom teachers, the primary and secondary school students, as well as the supporting staff, understand

and internalise the ultimate goals and the spirit of The National Education Philosophy. The Philosophy was well thought of and formulated in 1988 in the context of preparing more dynamic, productive, caring and humanistic citizens for the forthcoming challenges in the process of natural development towards attaining the industrialised status. By this, it does not give a connotation that the implementation of our education system from the early years does not have a philosophical basis. In fact, it was implicitly indicated in the policy documents such as the Razak Report (1956), the Rahman Talib Report (1960) and the Education Act 1961. Following the Report of the Cabinet Committee to review the implementation of Education Policy (1979), the Ministry of Education decided to state on paper explicitly the National Philosophy of Education.

The National Education Philosophy (NEP) states that:

“ Education in Malaysia is an on-going effort towards further developing the potential of individuals in a holistic and integrated manner, so as to produce individuals who are intellectually, spiritually, emotionally and physically balanced and harmonious, based on a firm belief in the and devotion to God. Such an effort is designed to produce Malaysian citizens who are knowledgeable and competent, who possess high moral standards, and who are responsible and capable of achieving high level of personal well-being as well as being able to contribute to the harmony and betterment of the family, the society ad the nation at large.”

To ensure quality education management and delivery system, the National Education Philosophy is used as a guiding principle in all matters pertaining to education

planning and implementation. Our present primary and secondary school curriculum, which is integrated in nature, were planned, designed and implemented to reflect the vision, goals and spirit of the National Education Philosophy (NEP). The formulation of our NEP was very timely to serve as a planning and implementation framework to meet the nine strategic challenges put forward in the Vision 2020 of Malaysia.

1.7.3 Colonial Education From the Second World War to Independence.

Education in the Colonial period was established by Christian missionaries. The first school was Penang Free School established in 1816 by R.S. Hutchings. The aims of education then were:

- to spread Christianity,
- to maintain status quo- people (as it is easy to manage),
- to maintain political stability by preventing ‘over- education’ as it happened in India,
- to provide basic literacy (3 Rs -Reading, Writing ,Arithmetic),
- to provide vocational skills in order to become better farmers and fishermen, handicrafts makers; lower-rank occupations such as clerical staff and police force.

The Malays were not keen to pursue education because the schools were in the urban areas, fear of being converted to Christians, no teaching of Islamic religious education and they felt that Islamic religious education was adequate and of higher value than any other forms of education.

A. Barnes Report

Completed by L.J. Barnes who was the Director of Social Training at the University of Oxford. The purpose for such a report was to look at the inadequacy of Malay education.

i. Findings:-

- Many Malay boys who had passed the Standard Four examination did not continue their studies in English secondary schools due to lack of transportation and accommodation.
- The standard of Malay education was low due to many factors. Among these factors were poor physical amenities, lack of communication, shortage of textbooks and general reading material, teachers were not trained, low quality of handicraft skills taught, simultaneous introduction to both Jawi and Rumi and religious education was taught in the afternoon and it was tiresome for the students.

ii. Recommendations:-

- Social integration in education,
- transformation of all existing vernacular schools into national schools,
- Malay becomes the medium of instruction and English as the second medium of instruction,
- Chinese and Tamil languages were to be taught as subjects,
- Jawi to be taught in religious education,
- proposed that secular subjects be introduced.

The implication of Barnes' Report is that there was opposition from non-Malays who perceived it as an attempt to eliminate their cultures and languages.

B. Fenn-Wu Report

Completed in 1957 and was chaired by W.P.Fenn who was the Associate Executive Secretary of the Board of Trustees of a dozen institutions of higher learning in China. T.Y. Wu a representative from the United Nations was also involved in the study. The purpose of this report was to appease the Chinese cultures and languages, to study the problem of Chinese education in the Federation.

i. Findings

The importance of Chinese cultures and languages were being ignored.

ii. Recommendations:-

- government assistance (grants) in the improvement of Chinese Schools through better equipment, facilities and trained teachers,
- Chinese Malaysians should be encouraged to be trilingual,
- The maintenance of existing English national-type schools,
- religious education is provided to pupils either within school premises or in suitable premises closest by as part of the school lesson,
- an appropriate religious authority should certify teachers training,
- schools should be multi-cultural whereby Chinese and Tamil languages were reintroduced.